

ABSTRACT

In accordance with the invention, an illumination device comprises a highly thermally conductive substrate having a surface, a plurality of light emitting diodes (LEDs) supported by the surface and arranged in an array to provide illumination. At least one
5 reflective barrier at least partially surrounds each LED. The reflective barrier is shaped to reflect away from the LED light emitted by other LEDs in the array. Advantageously the substrate and reflective barrier are thermally coupled to a heat spreader to dissipate heat generated by the LEDs. The substrate preferably comprises an LTTC-M heat spreader, and the reflective thermal barriers preferably comprise metal ridges or cups.